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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,977	02/09/2004	Owen R. Fay	SCI3160ZK	9595

23125 7590 09/30/2005

FREESCALE SEMICONDUCTOR, INC.
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EXAMINER

GUERRERO, MARIA F

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,977

Applicant(s)

FAY ET AL.

Examiner

Maria Guerrero

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-35 is/are allowed.
- 6) ☒ Claim(s) 1,5-9 and 11-15 is/are rejected.
- 7) ☒ Claim(s) 2-4, 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is the First Office Action on the merits.

Status of Claims

2. Claims 1-35 are pending.

Information Disclosure Statement

3. The information disclosure statement filed February 9, 2004 has been considered.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 5-9 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takaoka et al. (JP 2002-362677) (Translation) in view of Lee et al. (US 5,620,928).

6. Takaoka et al. teaches a method comprising: providing a porous carrier, providing an adhesive structure overlying the porous carrier, placing a first integrated circuit die over the adhesive structure, and separating the porous carrier from the structure (Fig. 1-3, Detailed Description, paragraphs 0001-0047, Technical Problem, Means, Example). Takaoka et al. shows employing a tape and the porous carrier comprising a polymer (Fig. 1-3, Detailed Description, paragraphs 0001-0047, Technical Problem, Means, Example). Takaoka et al. describes placing a second integrated circuit die over the adhesive structure and the pore size being 10 microns (Fig. 1-3, Detailed Description, paragraphs 0001-0047, Effect of the Invention, paragraphs 0015-0043, Technical Problem, Means, Example).

7. Takaoka et al. does not specifically describe encapsulating the first integrated circuit die to form an encapsulated structure. However, Lee et al. is cited as evidence to show that the encapsulating step is a conventional packaging process (Abstract, col. 2, lines 30-55, col. 4, lines 20-65).

Takaoka et al. does not specifically show the specific pore size and thickness as claimed. However, one of ordinary skill in the art would have found it prima facie obvious at the time of the invention to include specific pore size and thickness merely by following the teachings of the reference. In this regard, it is well settled that it is not inventive to determine (by mere routine experimentation) the optimum values of a result-effective variable. In re Peterson, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382 (Fed. Cir, 2003)(“The normal desire of scientist or artisans to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.”); In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) (“Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.”); In re Aller 220 F. 2d 454, 456, 105 USPQ 233, 235, (CCPA 1955)(“Where the general conditions of a claim are discloses in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to recognize that the encapsulating step would be included in Takaoka et al. reference as suggested by Lee et al. in order to better protect the chips from damage and to include the specific pore size and thickness by routine experimentation because there is not evidence of unexpected results.

Allowable Subject Matter

8. Claims 16-35 are allowed.
9. Claims 2-4 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter: in the examiner's opinion, the cited references do not show or suggest the step of separating the porous carrier by using a solvent that is passed through the porous carrier and the specific material claimed in combination with the rest of limitations on the claims because there is not motivation or suggestion.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Berger et al. (US 6,528,145), Japp et al. (US 6,370,293), Neu et al. (US 6,036,173), Lin (US 5,830,800), Emmerich et al. (US 6,370,293) and Jeong et al. (US 6,319,828) show several embodiments related to applicant's disclosure.
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 571-272-1837.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 26, 2005

Maria Guerrero
MARIA F. GUERRERO
PRIMARY EXAMINER